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MAY 9.

The President, Dr. RUSCHENBERGER, in the chair.

Twenty-six members present.

The following papers were presented for publication:—

“Fourth Contribution to the History of Existing Cetacea,” by Edw. D. Cope.

“Zoological and Biological Methods of Research,” by Harrison Allen, M.D.

Remarks on Fossils from the Ashley Phosphate Beds.—Prof. LEIDY observed that the so-called phosphate beds of Ashley River, South Carolina, were remarkable for the singular admixture of multitudes of fossils of different ages, from the early tertiary period inclusive down to the present epoch. The phosphatic nodules, for which the beds are explored, appear to have had their origin from the eocene rocks beneath. These have also contributed numerous remains of marine vertebrates especially of squalodonts, reptiles, and fishes. Mingled in the sand and clay with the phosphatic nodules and bones of eocene animals, are innumerable remains of cetaceans, sharks, and other marine animals of perhaps the middle and later tertiary ages. Added to these are multitudes of remains of both marine and terrestrial animals of the quaternary period. Pell-mell are found together bones of eocene squalodonts, animals related with the whales and seals; hosts of teeth of the great shark *Carcharodon angustidens*; myriads of the teeth of the giant of sharks of the tertiary period, the *Carcharodon megalodon*; bones and teeth of whales and porpoises; and abundance of remains of elephant, mastodon, megatherium, horse, etc.; and occasionally the rude implements of our more immediate ancestors.

From among a collection of fossils, from the Ashley phosphate beds, recently submitted to his inspection by Mr. J. M. Gliddon, of the Pacific Guano Company, the specimens were selected which lie upon the table. One of these is a well-preserved tooth of a *Megatherium*; another, a characteristic portion of the skull of a *Manatee*; a third, a complete tusk of the *Walrus*; indicating a still further point south for the extension of this animal than had been previously known; fourth, a huge tooth of a cetacean allied to the sperm whale, probably the same as those from the crag of Antwerp ascribed to *Dinoziphius*. Besides these there are the beaks of three cetaceans of the little known family of the *Ziphioids*. These are porpoise-like animals without teeth in the upper jaw, and usually with but a single pair of teeth in the lower jaw. The beaks composed of the co-ossified bones of the face are remarkable for their

On the Microscopic Observation of Minute Objects.—Prof. FRAZER remarked, that he desired simply to put on record a thought relating to Helmholtz's now famous establishment of the limit of vision through the microscope. As this limit was determined by half the length of a wave of light and since the wave-lengths of the most refrangible rays of the light spectrum (*i. e.* the violet) are somewhere near the 1-57000th part of an inch, the conclusion was reached that nothing more minute than the 1-114000th part of an inch could be seen. But actinic waves or others of smaller length (of greater refrangibility too) in passing through a substance on which are lines or other markings less than 1-114000th inch apart, may be altered to light waves, and become visible, provided, that the substance through which they pass is capable of fluorescing, *i. e.*, increasing their wave length, and provided the distance apart of the marks to be seen is not less than one-half the wave length of such actinic waves.

The meeting having adjourned until May 16, the following were then elected members of the Council:—

For three years—Edw. S. Whelen, R. S. Kenderdine, M.D., J. H. Redfield, J. G. Hunt, M.D.

For two years—Geo. H. Horn, M.D., Jos. Wharton, Jos. Jeanes, Geo. A. Kœnig.

For one year—Geo. Vaux, J. S. Haines, W. H. Dougherty, Harrison Allen, M.D.

MAY 16.

The President, Dr. RUSCHENBERGER, in the chair.

Thirty-four members present.

The "Sleep of Plants" as an Agent in Self-Fertilization.—Mr. THOMAS MEEHAN said that what is popularly known as the "sleep of plants," the closing of some kinds of flowers at nightfall, though a matter within common observation, had not, so far as he was aware, been made a subject of physiological investigation, with the view of ascertaining the value, if any, of this kind of motion in the economy of plant life. He had recently discovered that by means of this peculiar motion the common *Claytonia Virginica* and some butter-cups were fertilized by their own pollen. The fertilization of these plants had been somewhat of a mystery to him, as, in view of some prevailing theories of cross-fertilization by insect agency, these plants ought not to be self-fertilizers; but from repeated observation he was satisfied that no insects had visited plants that had yet seeded abundantly. Watching the process of fertilization in *Claytonia*, he found the stamens on